

Listing of Claims

1. (Currently Amended) A method for the selective imaging of body structures, ~~in which method~~ comprising steps where:
 - a first image data set is acquired by means of a first tomography method,
 - a second image data set is acquired by means of a second tomography method which has a resolution which is higher than that of the first method, the image data of the first and the second image data set coinciding at least partly in space,
 - an image is reconstructed from the first image data set, and
 - the image data to be imaged is selected from the first image data set by means of the second image data set,~~characterized in that~~ wherein for the reconstruction from the first image data set
 - first at least one image region to be imaged is selected from the second image data set, and
 - subsequently the image reconstruction is calculated from the image data of the first image data set which are situated in the selected image region.
2. (Currently Amended) A method as claimed in claim 1, ~~characterized in that~~ wherein the first tomography method is a nuclear medical tomography method, notably SPECT or PET.
3. (Currently Amended) A method as claimed in claim 1, ~~characterized in that~~ wherein the selection of the image region is performed by means of an automatic segmentation method.
4. (Currently Amended) A method as claimed in claim 1, ~~characterized in that~~ wherein the image reconstruction is carried out by way of iterative backprojection.

5. (Currently Amended) A method as claimed in claim 4, ~~characterized in that wherein~~ the calculation of the image consists of the initial calculation of an image by backprojection of the image data to be imaged of the first image data set, the following steps

- numerical formation of an iteration image data set from the calculated image,
- determination of the difference between the first image data set and the iteration image data set,
- calculation of an iteration image by addition of the difference to the calculated image, and the iterative repetition of these steps for the calculated iteration images until at least one convergence criterion is satisfied, that is, notably the difference dropping below a predetermined convergence value.

6. (Original) A device for the selective imaging of body structures, which device includes
- first tomographic image data acquisition means for the acquisition of a first image data set,
 - second tomographic image data acquisition means for the acquisition of a second image data set, which second tomographic image data acquisition means have a resolution which is higher than that of the first tomographic image data acquisition means,
 - backprojection means for image reconstruction of an image from the first image data set, and
 - selection means for selecting, by means of the second image data set, the image data to be imaged, characterized in that the backprojection means co-operate with the selection means in such a manner that the image is calculated exclusively from the image data of the first image data set which are situated in the selected image region.
7. (Original) A computer program which includes programming means for making a computer carry out the method claimed in claim 1 when the computer program is executed on a computer.

8. (New) A method for selectively imaging body structures, comprising the steps of:

- using a first tomography method to acquire a first image data set;
- using a second tomography method to acquire a second image data set, the second tomography method having a higher resolution than the first tomography method and the second image data set containing image data that at least partly coincides in space with image data of the first image data set; and
- reconstructing an image from the first image data set;

wherein data from the first image set used in the reconstructing set is selected using the second data set.

9. (New) The method of claim 8, wherein the reconstructing step further comprises the steps of:

- selecting a region to be imaged from at least one region represented in the second image data set; and
- calculating the image reconstruction from image data in a region represented in the first data set that corresponds to the selected region represented in the second data set.

Clean Version of Claims

1. A method for the selective imaging of body structures, in which method
 - a first image data set is acquired by means of a first tomography method,
 - a second image data set is acquired by means of a second tomography method which has a resolution which is higher than that of the first method, the image data of the first and the second image data set coinciding at least partly in space,
 - an image is reconstructed from the first image data set, and
 - the image data to be imaged is selected from the first image data set by means of the second image data set,wherein for the reconstruction from the first image data set
 - first at least one image region to be imaged is selected from the second image data set, and
 - subsequently the image reconstruction is calculated from the image data of the first image data set which are situated in the selected image region.
2. A method as claimed in claim 1, wherein the first tomography method is a nuclear medical tomography method, notably SPECT or PET.
3. A method as claimed in claim 1, wherein the selection of the image region is performed by means of an automatic segmentation method.
4. A method as claimed in claim 1, wherein the image reconstruction is carried out by way of iterative backprojection.

5. A method as claimed in claim 4, wherein the calculation of the image consists of the initial calculation of an image by backprojection of the image data to be imaged of the first image data set, the following steps

- numerical formation of an iteration image data set from the calculated image,
- determination of the difference between the first image data set and the iteration image data set,
- calculation of an iteration image by addition of the difference to the calculated image, and the iterative repetition of these steps for the calculated iteration images until at least one convergence criterion is satisfied, that is, notably the difference dropping below a predetermined convergence value.

6. A device for the selective imaging of body structures, which device includes
- first tomographic image data acquisition means for the acquisition of a first image data set,
 - second tomographic image data acquisition means for the acquisition of a second image data set, which second tomographic image data acquisition means have a resolution which is higher than that of the first tomographic image data acquisition means,
 - backprojection means for image reconstruction of an image from the first image data set, and
 - selection means for selecting, by means of the second image data set, the image data to be imaged, characterized in that the backprojection means co-operate with the selection means in such a manner that the image is calculated exclusively from the image data of the first image data set which are situated in the selected image region.
7. A computer program which includes programming means for making a computer carry out the method claimed in claim 1 when the computer program is executed on a computer.

8. (New) A method for selectively imaging body structures, comprising the steps of:

- using a first tomography method to acquire a first image data set;
- using a second tomography method to acquire a second image data set, the second tomography method having a higher resolution than the first tomography method and the second image data set containing image data that at least partly coincides in space with image data of the first image data set; and
- reconstructing an image from the first image data set;

wherein data from the first image set used in the reconstructing set is selected using the second data set.

9. (New) The method of claim 8, wherein the reconstructing step further comprises the steps of:

- selecting a region to be imaged from at least one region represented in the second image data set; and
- calculating the image reconstruction from image data in a region represented in the first data set that corresponds to the selected region represented in the second data set.